

**MEMORANDUM OF AGREEMENT BETWEEN
THE BUREAU OF RECLAMATION, MID-PACIFIC REGION
AND THE NEVADA STATE HISTORIC PRESERVATION OFFICER
REGARDING THE RESOLUTION OF ADVERSE EFFECTS FROM
THE DERBY DAM FISH SCREEN PROJECT,
STOREY AND WASHOE COUNTIES, NEVADA**

WHEREAS, under the authority of the Reclamation Act of 1902 (ch. 1093, 32 Stat. 388), on March 14, 1903, the Secretary of the Interior authorized the Reclamation Service, later the Bureau of Reclamation (Reclamation), to acquire lands to construct the Truckee-Carson Project, later renamed the Newlands Project, located in Churchill, Lyon, Storey, and Washoe counties, Nevada, and Placer County, California, which involves works to store waters of the Truckee and Carson Rivers; divert water for irrigation in the Carson River Basin; and reclaim lands in the Carson River Basin; and

WHEREAS, Reclamation plans to carry out the Derby Dam Fish Screen Project (Undertaking) as described in the 2001 Final Environmental Assessment (EA) and Biological Opinion (BO), to protect the federally listed as endangered cui-ui (*Chasmistes cujus*), the threatened Lahontan cutthroat trout (*Onchorhynchus clarki henshawi*), and resident fish species that may be diverted into the Truckee Canal (Canal) by constructing the Undertaking that will provide fish passage out of the Canal to spawning and rearing habitat downstream of Derby Dam in the Truckee River/Pyramid Lake watershed thereby making the Undertaking subject to review under Section 106 of the National Historic Preservation Act (NHPA), 54 U.S.C. § 306108, and its implementing regulations, 36 C.F.R. Part 800; and

WHEREAS, the Undertaking will affect waters of the United States, and will require a permit pursuant to Section 404 of the Clean Water Act (33 U.S.C. § 1344) and a permission pursuant to Section 14 of the Rivers and Harbors Act (33 U.S.C. § 408), from the United States Army Corps of Engineers, Sacramento District (USACE) (USACE's Undertaking); and

WHEREAS, the USACE has designated Reclamation as the Lead Federal Agency for the Undertaking under Section 106, and will not be a signatory to this Memorandum of Agreement (MOA); and

WHEREAS, Reclamation has defined the Undertaking's area of potential effects (APE) as the area directly and visually affected by the construction of components of the fish screen, including three screen structures, two fish return water channels to the Truckee River, a fish screen bypass, a Canal gate structure, a fish screen forebay and afterbay, and a fish return pool along the Canal as well as construction of a temporary road, temporary bridges, and a temporary river crossing as shown in Attachment 1 and as described in Attachment 2; and

WHEREAS, Reclamation has invited the Pyramid Lake Paiute Tribe (PLPT), the Reno-Sparks Indian Colony, and the Washoe Tribe of Nevada and California (referred to hereinafter collectively as Tribes and singly by their title), as federally recognized tribes who may attach religious and cultural significance to historic properties that may be affected by the Undertaking, to participate in the development of this MOA. Any of these Tribes may elect to be a Concurring Party to this MOA. As of the execution of this MOA, only the PLPT has responded

to requests to participate, but Reclamation will continue to coordinate and consult with all Tribes, as appropriate; and

WHEREAS, the Newlands Project is located on the Nevada-California border in the Reno-Fallon-Fernley area with water for the Newlands Project coming from Lake Tahoe to the Truckee River to Pyramid Lake, and the Carson River which flows east of the Carson Range of the Sierra Nevada Mountains and empties into the Carson Sink. The Newlands Project is a network of water storage, diversion, and conveyance structures that provides water for irrigating farmland and other purposes, generates hydroelectric power, and consists of two storage dams, two diversion dams, 69 canals and 312 laterals, was constructed from 1903 to 1906 and has been in continuous operation since; and

WHEREAS, due to the complexity of the Newlands Project and the disjointed nature of its many components, a multiple property National Register of Historic Places (National Register) approach, rather than a single district approach, was considered most appropriate for recognizing significance. The property types associated with the Newlands Project consist of structures built for the storage, diversion, delivery, and power development of water and include dams, water conveyance and control structures, power plants, and pumping plants, and properties that are associated with the construction, ongoing operation and maintenance, and settlement of the Newlands Project. Reclamation consulted with the Nevada State Historic Preservation Officer (SHPO) on this approach and in a letter dated February 18, 2003, the SHPO supported the documentation provided for the Newlands Project Multiple Property Listing (MPL); and

WHEREAS, portions of the Newlands Project were listed as eligible historic properties in the National Register on March 25, 1981, as the Newlands Reclamation Thematic Resource, which has subsequently been updated to include documentation outlining registration requirements for eligible properties associated with the Newlands Project under the Newlands Project MPL (reports completed 2001 and 2002, approved by the Keeper of the National Register in May 2003); and

WHEREAS, the Canal (S846) is part of the Newlands Project MPL and is eligible for listing in the National Register under Criterion A; and

WHEREAS, the Derby Dam (S1641; NRIS Reference No. 78001728) is part of the Newlands Project MPL and is individually listed in the National Register under Criterion A; and

WHEREAS, Reclamation has identified the Truckee River within the Undertaking APE, which was previously identified as a Traditional Cultural Property (TCP) through consultation with the PLPT. Reclamation, in coordination with PLPT, was unable to identify any elements of the TCP that would be adversely affected by the Undertaking; and

WHEREAS, Reclamation has determined that the Undertaking would result in an adverse effect on the overall Newlands Project MPL and two Newlands Project MPL associated features within the APE, the Canal and Derby Dam. Reclamation has consulted with the SHPO pursuant to 36 CFR Part 800, the regulations implementing Section 106 of the National Historic Preservation Act (NHPA) (54 U.S.C. §306108), and in a letter dated May 2, 2019, the SHPO concurred with

Reclamation's determination that the Undertaking would have an adverse effect on these historic properties; and

WHEREAS, in accordance with 36 CFR § 800.6(a)(1), Reclamation has notified the Advisory Council on Historic Preservation (ACHP) of its adverse effect determination, invited their participation in the 106 process, and received an email receipt of notification and invitation on April 18, 2019. In accordance with 36 CFR Part 800.6(1), the ACHP did not respond further within 15 days of receipt and has, therefore, chosen not to participate in the consultation pursuant to 36 CFR § 800.6(a)(1)(iii) and will be provided the final agreement document at the conclusion of the consultation process; and

WHEREAS, the Signatories, the USACE, and the Concurring Parties will be collectively referred to Consulting Parties or individually by their title or status; and

NOW, THEREFORE, Reclamation and the SHPO agree that the Undertaking shall be implemented in accordance with the following stipulations in order to take into account the effect of the Undertaking on historic properties.

STIPULATIONS

Reclamation shall ensure that the following measures are carried out:

I. ROLES AND RESPONSIBILITIES

This MOA will also be a condition of the USACE's proposed Clean Water Act Section 404 permit and Section 408 permission for alteration of USACE's civil works project. Reclamation will provide oversight of this MOA, coordinate with consulting parties, participate in the resolution of objections among the consulting parties, and provide technical assistance.

II. PROFESSIONAL QUALIFICATIONS STANDARDS

All actions prescribed by this MOA that involve the identification, evaluation, analysis, recording, treatment, monitoring, or disposition for historic properties, or that involve reporting or documentation of such actions in the form of reports, forms, or other records, shall be carried out by or under the direct supervision of a person or persons who meet at a minimum the Secretary of Interior's Professional Qualifications Standards (48 FR 44738-44739; Appendix A to 36 CFR 61) in the appropriate discipline.

III. AREA OF POTENTIAL EFFECT MODIFICATIONS

- A In the event that changes to the Undertaking necessitate modifying the APE, Reclamation will provide documentation of the modified APE to the SHPO and Concurring Parties for review.
 - 1. The SHPO and Concurring Parties shall have thirty (30) calendar days from the date of receipt to provide written comments to Reclamation. Reclamation will consider all substantive written comments for incorporation into final documents or other

deliverables. Failure of the reviewing party or parties to respond within thirty (30) calendar days shall not preclude Reclamation from moving forward with the modified APE.

IV. TIME FRAMES AND REVIEW PROCEDURES

- A. Reclamation shall provide a hard copy draft document or deliverable via mail to the USACE and the Concurring Parties for review and comment. Any written comments provided by the USACE or Concurring Parties within thirty (30) calendar days from the date of receipt, shall be considered in the revision of the document or deliverable.
- B. Reclamation shall provide a draft final document or deliverable to the SHPO for review and comment. Reclamation shall also include a document reporting the substantive written comments previously received and how comments were addressed during the Concurring Parties review in Stipulation IV.A above. The SHPO shall have thirty (30) calendar days from receipt to respond. Any written comments provided by the SHPO within thirty (30) calendar days from the date of receipt, shall be considered in the revision of the document or deliverable. Failure of the SHPO, to respond within thirty (30) calendar days shall not preclude Reclamation from moving forward with the Undertaking or the next step in this MOA.
- C. Should Reclamation and the SHPO be unable to reach agreement on a final document or deliverable, Reclamation and the SHPO shall consult for a period not to exceed fifteen (15) calendar days following the receipt of the SHPO's written objection in an effort to come to agreement. Should Reclamation and the SHPO be unable to agree on the issue, Reclamation and the SHPO shall proceed in accordance with Stipulation VII below.

V. RESOLUTION OF ADVERSE EFFECTS

The following outlines Reclamation's commitments for the resolution of adverse effects.

- A. Historic American Engineering Record (HAER)-like documentation of Canal segment affected, similar to Level II HAER recordation that will include historic context, reproducing existing plans, archival quality photo-documentation in large format, negatives and photos. Photo-documentation for Derby Dam will also be completed as part of this task, although not included within the Canal HAER-like report.
 - 1. Reclamation will complete photo documentation prior to any construction or ground disturbance and submit to the SHPO for review and comment.
 - 2. Reclamation will submit the photo documentation to the SHPO and follow the time frames established in Stipulation IV. Reclamation will consider all substantive written comments for incorporation into the final documents or other deliverables. If no comments are received within the time frames in Stipulation IV, Reclamation may proceed to the next step and issue a notice to proceed.

- B. Update the National Register nomination form for Derby Dam to include specific language regarding what criteria it is eligible under and its character defining features. This analysis will include consideration of the seven aspects of integrity.
 - 1. Reclamation will develop and submit the National Register nomination form for Derby Dam and submit the draft to SHPO for review and comment no later than one (1) year following the execution of the MOA. Reclamation will consider all substantive written comments for incorporation into final documents or other deliverables.
- C. Reclamation would provide assistance to update the public Newlands Project exhibit at the Churchill County Museum and Archives (Museum).
 - 1. Reclamation will develop and complete an agreement with the Museum within one (1) year following the execution of this MOA. The scope and nature of the assistance will be determined during the development of an agreement with the Museum.
 - 2. Reclamation will provide the draft agreement to the SHPO for review and comment and follow the time frames established in Stipulation III. Reclamation will consider all substantive written comments for incorporation into final documents or other deliverables. If no comments are received within time frames in Stipulation III, Reclamation may proceed to the next step and execute the agreement.
 - 3. Reclamation will implement the executed agreement that will be attached to this MOA and titled Attachment 3.
- D. Reclamation will conduct outreach to Federal, State, and Cultural Resource management firms in the region by providing them the unpublished *Newlands Project Nevada: A Multiple Property Documentation Form (Pfaff 2002)* document and discussing how we will use it for evaluations on Newlands Project MPL features. Reclamation will develop a short guide (Guide) as an introduction and to demonstrate how the Pfaff document should be used for National Register evaluations.
 - 1. Reclamation will develop the guide within six (6) months following the execution of this MOA. Reclamation will consult with the SHPO in the identification of coordinating parties.
 - 2. Reclamation will provide the draft guide to the SHPO for review and comment and follow the time frames established in Stipulation III. Reclamation will consider all substantive written comments for incorporation into final documents or other deliverables. If no comments are received within time frames in Stipulation III, Reclamation may finalize and distribute the guide and Newlands Project MPL.

VI. POST REVIEW DISCOVERIES

In the event of a post review discovery during construction or activities to resolve adverse effects, Reclamation will determine if ongoing construction activities will affect a previously unidentified property that may be eligible for the National Register, affect a known historic property in an unanticipated manner, and address the discovery or unanticipated effect in accordance with 36 CFR § 800.13(b). Reclamation at its discretion may, in accordance with 36 CFR § 800.13(c), assume any discovered property to be eligible for inclusion in the National Register for the purposes of implementing this MOA.

VII. DISPUTE RESOLUTION

- A. Should any Consulting Party object at any time to any actions proposed or to the manner in which the terms of this MOA are implemented, Reclamation shall consult with such party to resolve the objection. If any other consulting party, or a member of the public, raises an objection to any actions proposed under the MOA, or to the manner in which the terms of this MOA are implemented, Reclamation shall immediately notify the Consulting Parties in writing of the objection and take the objection into consideration.
- B. If Reclamation determines that an objection cannot be resolved, Reclamation will:
 - 1. Forward all documentation relevant to the dispute, including Reclamation's proposed resolution, to the ACHP. The ACHP shall provide Reclamation with its advice on the resolution of the objection within thirty (30) days of receiving adequate documentation. Prior to reaching a final decision on the dispute, Reclamation shall prepare a written response that takes into account any timely advice or comments regarding the dispute from the ACHP or the Consulting Parties and provide them with a copy of the written response. Reclamation will then proceed in accordance with its final decision.
 - 2. If the ACHP does not provide its advice regarding the dispute within the thirty (30) day time period, Reclamation may make a final decision on the dispute and proceed accordingly. Prior to reaching a final decision, Reclamation shall prepare a written response that takes into account any timely comments regarding the dispute from the Consulting Parties, and provide them and the ACHP with a copy of such written response.
 - 3. Reclamation's responsibility to carry out all other actions subject to the terms of this MOA that are not the subject of the dispute remain unchanged.

VIII. ADMINISTRATIVE STIPULATIONS

A. Amendments

- 1. This MOA may be amended when such an amendment is agreed to in writing by

all Signatories. The amendment will be effective on the date a copy signed by all of the Signatories is filed with the ACHP.

2. Reclamation may amend the project description (Attachment 2) to address necessary changes to the Undertaking, without amendment to this MOA. Any amendment to the Undertaking description will be provided to the Consulting Parties with analysis of any change to the prior findings in this MOA for review and comment per the time frames established in Stipulation IV. If no comments are received within the review period, no additional action is required by Reclamation.

B. Duration

1. This MOA will be in effect following execution by the Signatories and will remain in effect until the end of construction and all the terms of this MOA have been satisfactorily fulfilled or for five (5) years after execution, whichever comes first. If the Undertaking has not been authorized under Section 404 of the Clean Water Act within five (5) years following execution of this MOA by the Signatories, this MOA will automatically terminate and have no further force or effect. In such event, Reclamation will notify the Consulting Parties in writing and, if it chooses to continue with the Undertaking, will reinitiate review of the Undertaking in accordance with Section 106 of the NHPA (54 U.S.C. § 306108) and all applicable regulations.
2. If Reclamation determines that the requirements of the MOA cannot be met in five (5) years, the Consulting Parties will consult to reconsider its terms and/or a continuation. Reconsideration may include the continuation of the MOA as originally executed, amendment of the MOA, or termination. In the event of termination, Reclamation will comply with Stipulation VIII D. 2., if it determines that the Undertaking will proceed notwithstanding termination of this MOA.

C. Confidentiality

1. All Consulting Parties will ensure that shared data, including data concerning the precise location and nature of archaeological resources and properties of religious and cultural significance, are protected from public disclosure to the greatest extent permitted by law, including conformance to Section 304 of the NHPA, as amended (54 U.S.C. § 307103), and implementing regulations under 36 CFR § 800.6(a)(5) and 36 CFR § 800.11(c); Section 9 of the Archaeological Resources Protection Act (10 U.S.C. §§ 470aa – 470mm); Freedom of Information Act (FOIA); Executive Order on Sacred Sites 13007 FR 61-104 (dated May 24, 1996); and all other applicable laws and regulations in Nevada.

D. Termination

1. If any Signatory to this MOA determines that its terms will not or cannot be carried out, that party shall immediately consult with the other Signatory to attempt to develop an amendment per Stipulation VIII.A, above. If within thirty (30) days (or another time period agreed to by all Signatories) an amendment cannot be reached, any Signatory may terminate the MOA upon written notification to the other Signatories.
2. Once the MOA is terminated, and prior to work continuing on the Undertaking, Reclamation must either (a) execute an MOA pursuant to 36 CFR § 800.6 or (b) request, take into account, and respond to the comments of the ACHP under 36 CFR § 800.7. Reclamation shall notify the Signatories as to the course of action it will pursue.

IX. ANNUAL REPORTING REQUIREMENTS AND RELATED REVIEWS

- A. Reclamation will prepare and distribute an annual summary report to the Consulting Parties for review and comment. Reclamation will complete the first Annual Report no later than February 1, every year after the MOA has been in effect for one full year. The report will discuss the actions taken the prior year to complete the stipulations of this MOA. The report shall include any scheduling changes, any problems encountered, and any disputes and objections received during efforts to carry out the terms of this MOA.
- B. The Consulting Parties will review the Annual Report and provide any comments to Reclamation within thirty (30) calendar days of receipt. Reclamation will take into account all comments received from the Consulting Parties within the thirty (30) day review period in finalizing the report. If no comments are received within the review period, Reclamation may assume there are no comments on the Annual Report and finalize the report.
- C. The SHPO or Concurring Party may request in writing to meet with Reclamation to discuss the contents of the Annual Report and such meeting shall be scheduled within thirty (30) days of such request.
- D. Reclamation's Annual reporting requirements will remain in effect until the MOA expires or is terminated in accord with Stipulation VIII.D.

X. AUTHORIZING SIGNATURES

In witness hereof, the following authorized representatives of the Consulting Parties have signed their names on the dates indicated, thereby executing this MOA. The Consulting Parties agree that this MOA may be signed in counterparts and the executed MOA, and each signature, will be effective and binding as if all parties had signed the same document. Reclamation will distribute copies.

Execution of this MOA by Reclamation and the SHPO and implementation of its terms evidence that Reclamation has taken into account the effects of this Undertaking on historic properties and afforded the ACHP an opportunity to comment.

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STOREY AND WASHOE COUNTIES, NEVADA**

SIGNATORY

U.S. DEPARTMENT OF THE INTERIOR, BUREAU OF RECLAMATION



Ernest A. Conant
Regional Director, Mid-Pacific Region

8/21/19
Date

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SIGNATORY

NEVADA STATE HISTORIC PRESERVATION OFFICER



Rebecca L. Palmer
Nevada State Historic Preservation Officer

08/21/19
Date

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CONCURRING PARTY:

PYRAMID LAKE PAIUTE TRIBE

Anthony Sampson
Chairperson

Date

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CONCURRING PARTY:

RENO SPARKS INDIAN COLONY

Arlan D. Melendez
Chairperson

Date

Michon R. Eben,
THPO

Date

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CONCURRING PARTY:

WASHOE TRIBE OF NEVADA AND CALIFORNIA

Serrell Smokey
Chairperson

Date

ATTACHMENT 1
DERBY DAM FISH SCREEN PROJECT
AREA OF POTENTIAL EFFECT MAP

RECLAMATION

Managing Water in the West



ATTACHMENT 2

DERBY DAM FISH SCREEN PROJECT

PROJECT DESCRIPTION

1. Introduction

Bureau of Reclamation (Reclamation) is in the process of completing the Derby Dam (Dam) Fish Screen Environmental Assessment (EA). As part of the National Environmental Protection Act (NEPA) process, Reclamation is coordinating with the Nevada State Historic Preservation Office (NVSHPO) to complete Section 106 Consultation. Reclamation's Mid-Pacific Region, Cultural Resources Division requested the Lahontan Basin Area Office (LBAO) to provide the project description and figures for the proposed planned activities. This document provides the proposed project description and figures depicting the Canal, fish screen area, construction activity locations, and excavation plan. The purpose of the Derby Dam Fish Screen is to immediately return Lahontan Cutthroat Trout (LCT), an Endangered Species Act (ESA) threatened species that have entered the Canal, back to the Truckee River to continue their migration. LCT that end up downstream in the Canal die due to conditions; therefore, they are considered to be a take.

Cultural surveys and Section 106 consultation with NVSHPO were completed in 2000 for the Derby Dam Fish Facility and Passage Environmental Assessment. In 2005, cultural surveys were completed for the south-side of the Truckee River by Patrick Welsh and the north-side by Amy Barnes. In 2015, surveys and Section 106 consultation were completed for the removal of the Dam Tender Houses and a Memorandum of Agreement was completed between Reclamation and NVSHPO. Additionally, in 2015 Reclamation surveyed the Canal as part of the Truckee Canal XM EIS. Reclamation is currently completing additional historic property identification efforts.

In 2018, Reclamation changed the type of fish screen from a vertical to a horizontal and the placement area for the fish screen was modified. The location of the new screen will be in the vicinity of the previously surveyed Dam Tender houses.

2. Project Description

Truckee River water is diverted at Derby Diversion Dam into the Canal for use in the Newlands Project, as provided in Claim No. 3 of the Orr Ditch Decree (*United States v. Orr Water Ditch Co.*, Equity No. A3 [D. Nev. 1944]) and in accordance with the OCAP. The Canal parallels the Truckee River for about 10 miles and then turns southeast toward Fernley, following the topographic contour along the north-facing slope of the hills skirting the southern edge of Fernley before turning south again and ultimately discharging into Lahontan Reservoir about 31 miles below Derby Dam.

Reclamation plans to continue to divert Truckee River water as described above at Derby Diversion Dam into the Canal, and there will be no changes to the dam or headworks. Reclamation plans to construct the Derby Dam Fish Screen that will return fish that have entered the Canal back to the Truckee River to migrate downstream. This construction will change how water is conveyed in the Canal. The river water will be diverted into the forebay and passed through the fish screen before returning to the Canal via the afterbay. The fish that enter the fish screen will be returned to the Truckee River via the fish return water way and associated structures.

2.1 Project Activities

The Derby Dam Fish Screen design and specifications have not been finalized, but are expected to be completed by May 2019. The proposed Derby Dam Fish Screen Project activities include:

- Soil excavation, filling, grading and contouring (Canal, staging, and fish screen component areas)
- Construction of the fish screen components
- Construction of the fish return features
- Construction of a new road
- Construction of Canal permanent and temporary gate structures
- Removal of Canal embankments for forebay and afterbay
- Construction of a temporary Truckee River crossing
- Construction of fish return pools within the Truckee River
- Replacement of a security gate/barrier along the Truckee Canal

Truckee Canal

There will be four permanent changes to the Canal. Two changes consist of excavation of the north side embankment for the forebay and afterbay, the third change consist of the installation of a gate structure within the current canal prism, and the fourth change would be the grading, installation, and placement of the geomembrane liner with the concrete cover.

Embankment Changes

Forebay

The north side Canal embankment from the end of the existing concrete lining to about

150 linear feet more downstream will be excavated to the depth of the Canal bottom (about 15 feet). This will enable the forebay and fish screen inlet gated structure to be constructed and provides the required water surface elevation for the gravity flow operation of the fish screens. The forebay south slope and floor will be concrete lined and will include a new north side concrete wall to prevent water from returning to the Truckee River via seepage or inadvertent piping through the embankment.

Afterbay

At the gated exit of the fish screen, an afterbay will be constructed to return the diverted water back into the Canal. Approximately 100 linear feet of the Canal embankment will be excavated to allow up to approximately 500 to 600 cubic feet per second (cfs) of screened water to be diverted into the Canal for project usage. The afterbay will be lined with a concrete and include concrete walls on the north and south sides of the afterbay and return flume. The afterbay will be located about 750 feet from the diversion headworks.

Truckee Canal Bypass and Isolation Gated Structure

Reclamation will construct one permanent concrete gated structure within the prism of the Canal. The gate structure will consist of one or two steel radial gates, similar to the Canal's Bango Check structure, or multiple steel slide gates. The gated structure's primary purpose is isolate and prevent the diverted River water from entering the Canal unscreened. During normal operations, the gates will be closed forcing water and fish through the fish screen. As an emergency precaution in the event that the fish screens are not functioning, the Truckee River water would bypass the screens and flow unscreened into the Canal via the new permanent gated structure.

Liner Description

The Canal is 31 miles long and the prism is currently concrete lined at multiple locations for a total of approximately 4 miles. The Canal is currently concrete lined from the Derby Dam diversion headworks east for about 100 feet. Reclamation will continue the concrete liner for about 1200 linear feet from the current concrete lining up to and past the new permanent gate structure in the Canal. The construction will consist of installing a full prism geomembrane liner with approximately 3-6 inches of concrete cover in all areas besides the forebay and afterbay described above.

Temporary Gate Structure

Reclamation will construct two temporary gate structures separated by two 10-foot-diameter HDPE pipes within the prism of the Canal. Both gate structures will consist two steel slide gates. The purpose of the temporary gate structures and HDPE pipe is to divert River water through the fish screen construction area to allow necessary diversions to the Canal.

Fish Screen Components

The area where the fish screen and fish return features will be located is very uneven and varying slopes requiring major excavation, filling, grading, and contouring. The components of the fish screen include the fish screens themselves, inlet and outlet gates and flumes, the fish return features and a deep return pool, and the forebay and underscreen drain pipes. The construction activities to be completed and the fish screen components are conceptually described below.

Excavation

The area where the fish screen system and features will be located will require excavation, filling, grading, and contouring. The area where the forebay will be constructed, requires excavation to the depth of the bottom of the Canal, about 15 to 20 feet; this equates to about 15,000 cubic yards (yd³). The area where the fish screens will be constructed, require excavation from 5 to 20 feet from the edge of the Canal out approximately 150 feet north toward the Truckee River. This equates to about 25,000 yd³ of soil to be removed. The area where the afterbay will be constructed, requires excavation to the depth of the bottom of the Canal, about 15 to 20 feet; this equates to about 10,000 cubic yards (yd³).

Fill, Grade, and Contour

The excavated soil described above will be used to fill in the low areas as depicted on Figure 2. One to 15 feet of fill will be required in the areas where the fish return features are located. Approximately, 30,000 yd³ of soil will be used to fill the fish return feature area and any excess will be used in Staging Area B; this area could accept up to 20,000 yd³ of fill. After the fill is placed it will be compacted, graded, and contoured for natural drainage toward the Truckee River.

Construction of New Road for Fish Screen Access

A portion of the Canal access road will be removed to accommodate the fish screen. The fish screen will be constructed in the area where the current road is located. Reclamation will construct (grade, fill, and compact) a new road north of the fish screen area to allow access for maintenance. The gravel road will be 15 to 20 feet wide and 1000 feet long. Up to three bridges may be required to cross over the fish return features; however, each bridge will be less than ten feet in length.

Bridges

Up to three permanent concrete or steel bridges may be constructed to allow vehicle access to the fish screen for operation and maintenance. Bridges may be installed over the afterbay or fish return features. Each bridge will be less than 50 feet long and approximately 15 feet wide.

Buildings

Currently, there is an approximately 30-square-foot building housing the Derby Dam programmable logic control equipment in the proposed fish screen area. Reclamation will remove this building and will move the equipment to one of the two proposed buildings, as described below.

One or two new buildings will be constructed to the east of the fish screen, as shown in Error! Reference source not found.. The buildings will be between 100 and 400 square feet. The exact locations will be determined during design development. The buildings will house the supervisory control and data acquisition equipment to monitor and operate the fish screen. The buildings will also house a standby diesel generator and air compressor to allow the screen to operate during a power outage.

Fish Screen Conceptual Description

Five fish screens, located within three screen structures, two large structures with dual fish screens and one structure with a single smaller screen (See Figure 3). The fish screens will be located north of the Canal between the Canal and the Truckee River. One of the large dual screens will have the leading edge of the screens located approximately 330 feet from diversion headworks, the second large dual screen will have the leading edge of the screens located 450 feet from the diversion headworks, and the small single screen will have the leading edge of the screen located 280 feet from the diversion headworks (See Figure 3). Each screen will have radial or slide gates located at the inlets and outlets.

Fish Return to the Truckee River

Reclamation will construct the fish return bypass feature or features, designed in coordination with the USFWS. The fish return feature or features will route screened water and fish to the fish return deep pool in the Truckee River, described below. The feature or features could consist of either open channels or pipes.

An open channel design would consist of a channel or channels up to approximately 14 feet wide. The channel or channels would be constructed from concrete or rock, and would slope down to the river edge. One or more steps down to the river edge may be required to maintain an appropriate grade. Approximately 100 yd³ of concrete or rock would be used. The open channel or channels would be constructed below grade in areas where fill is placed and compacted.

A pipe design would consist of two concrete or HDPE pipes between 30 and 40 inches in diameter. The pipe, which would also be installed mostly below finish grade, would maintain a uniform slope to the river edge, where it would be slightly above the river surface during low flow periods.

Forebay and Underscreen Drain Pipes

A drain pipe would be installed to allow the forebay to be drained into the Truckee River and to transfer Truckee River sediments that accumulate in the forebay, back to the river. The drain pipe would discharge at a location between the Derby Dam spillway apron and the fish return deep pool.

Similarly, an underscreen drain pipe would be installed to allow water in the screen areas to be drained into the river. This drain pipe would discharge into the fish return deep pool, as described above.

Neither drain pipe would require construction within the Truckee River ordinary high water mark (OHWM).

Truckee River Construction and Access

There will be up to three permanent and one temporary changes to the Truckee River. The changes include the construction of fish return pools and a temporary river crossing for equipment.

Fish Return Deep Pools

To promote fish survival, Reclamation will construct a fish return deep pool in the Truckee River, designed in coordination with the USFWS. The fish return feature or features described above will discharge screened water and fish into the fish return deep pool.

The fish return deep pool will be approximately 30 feet in diameter. It will be excavated in the Truckee River channel, with a bottom of compacted fill, and armored with cobble and large rock. The pool bottom will be approximately 12 feet below the OHWM elevation.

An engineered log jam will be built immediately upstream of the fish return deep pool. This structure will dissipate energy and create currents that would passively scour the fish return deep pool, preventing sediment accumulation. The engineered log jam would use four log layers containing seven horizontal logs with intact root wads. Five vertical logs will be driven into the channel and will secure the engineered log jam in place.

An approximately 3,300-square-foot work area will be temporarily isolated using ecology blocks,¹ sandbags, and plastic sheeting, or a similar method, to prevent sediment from going into the river. The work area may not be completely dewatered due to the difficulties posed by the gravelly nature of the river channel. Water pumped from the temporary work area will be discharged into a sediment settling basin before being returned to the Truckee River. After the temporary work area was isolated, an excavator will excavate the fish return deep pool, place logs to construct the engineered log jam, and drive the log piles into the channel bottom. The temporarily isolated work area will be in place for approximately two weeks.

Work within the Truckee River OHWM² would occur outside the period of LCT and Cui-ui peak spawning (February through early May), or as determined in coordination with the USFWS. Before construction begins in the isolated area, any fish in the temporarily isolated work area would be salvaged and released into the river, in accordance with applicable USFWS and Nevada Department of Wildlife (NDOW) protocol.

Reclamation estimates that construction may require excavating approximately 400 yd³ of material from the Truckee River. The excavated material would be placed away from the river, and erosion control Best Management Practices will prevent excavated materials from returning to the river via runoff. Reclamation will sample excavated Truckee River sediments for contamination and follow appropriate disposal procedures based on sampling results.

After construction, the river bank will be recontoured and planted with native riparian plantings for stabilization.

Temporary Truckee River Crossing

A temporary river crossing will be constructed at the end of an existing access road between Staging Area A and the Truckee River's north bank. The temporary river crossing will extend to the fish screen area on the south side of the river. Reclamation is considering two options to

¹ Concrete blocks used for building retaining walls. They can be stacked together using a tongue-and-groove design.

² The ordinary high water mark defines the boundaries of aquatic features for a variety of federal, state, and local regulatory purposes.

construct the temporary crossing: an in-water crossing, and a temporary bridge. Both options are described below.

The in-water temporary river crossing area will be approximately 25 feet wide and between 60 and 80 feet long within the Truckee River OHWM depending on the exact alignment.

To construct the in-water temporary crossing, Reclamation will use a grader or front-end loader to grade the river banks at each end of the crossing alignment to a 10:1 slope. This grade would allow equipment operators to safely enter and exit the river. Large rocks or boulders may be removed as necessary to improve access. Excavated materials will be stockpiled away from the river. After construction, the in-water temporary river crossing will be removed and recontoured to preconstruction elevations, and the recontoured banks would be planted with native riparian plantings. No permanent or imported fill materials will be used to construct or recontour this feature.

The in-water temporary river crossing will be constructed, used, and recontoured outside the period of LCT and Cui-ui peak spawning (February through early May), or as determined in coordination with the USFWS.

The temporary bridge option will either span the Truckee River, or a temporary abutment will be placed in the Truckee River. For a spanning bridge, abutments will be placed above the OHWM. For a non-spanning bridge, one or more temporary abutments will be placed within the OHWM. The temporary bridge will likely be between 120 and 150 feet long. Exact bridge and abutment dimensions, materials, and specifications will be determined based on project needs.

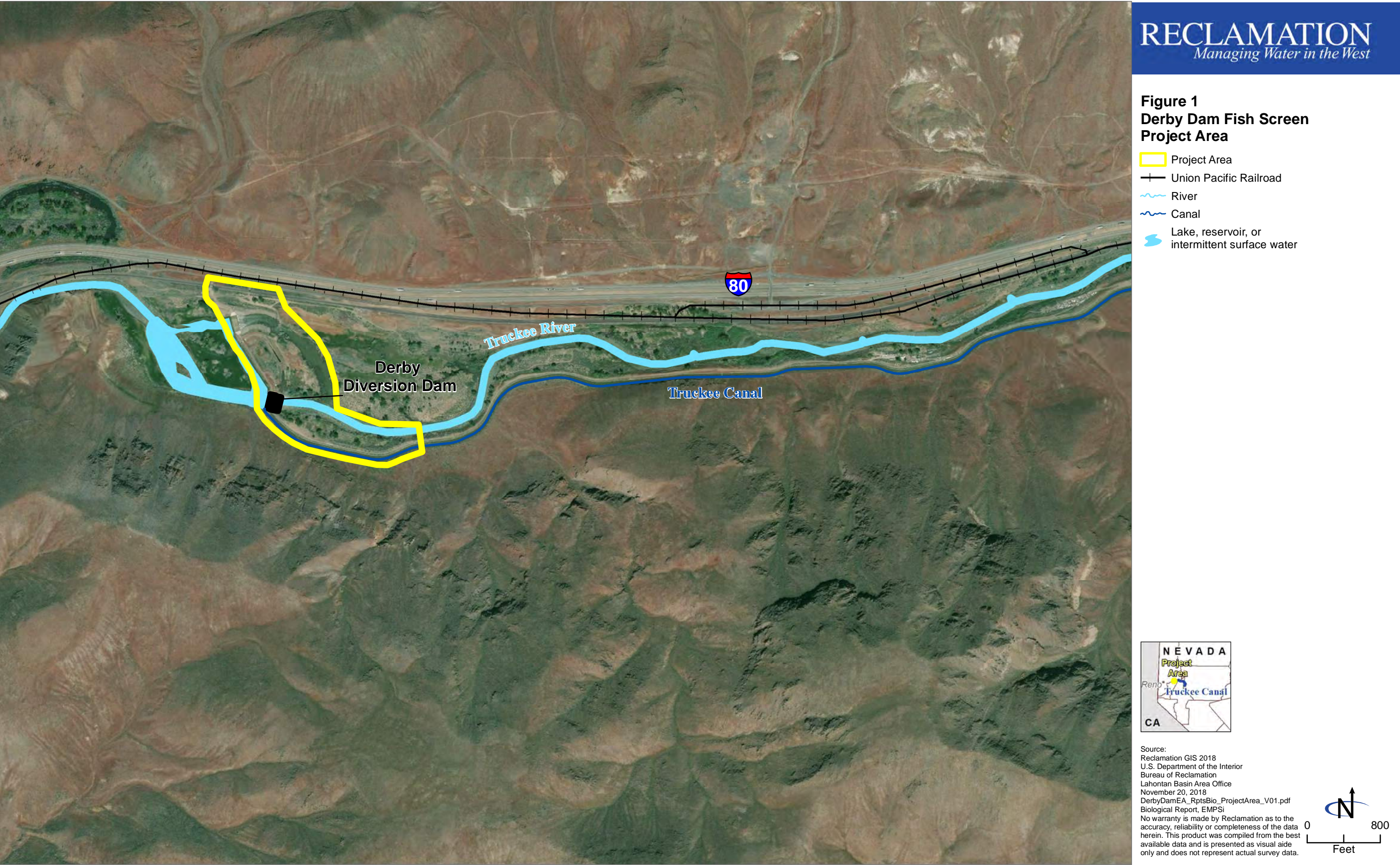
The temporary bridge will remain in place for construction duration. After construction, the temporary bridge and abutments will be removed and abutment areas recontoured to preconstruction conditions.

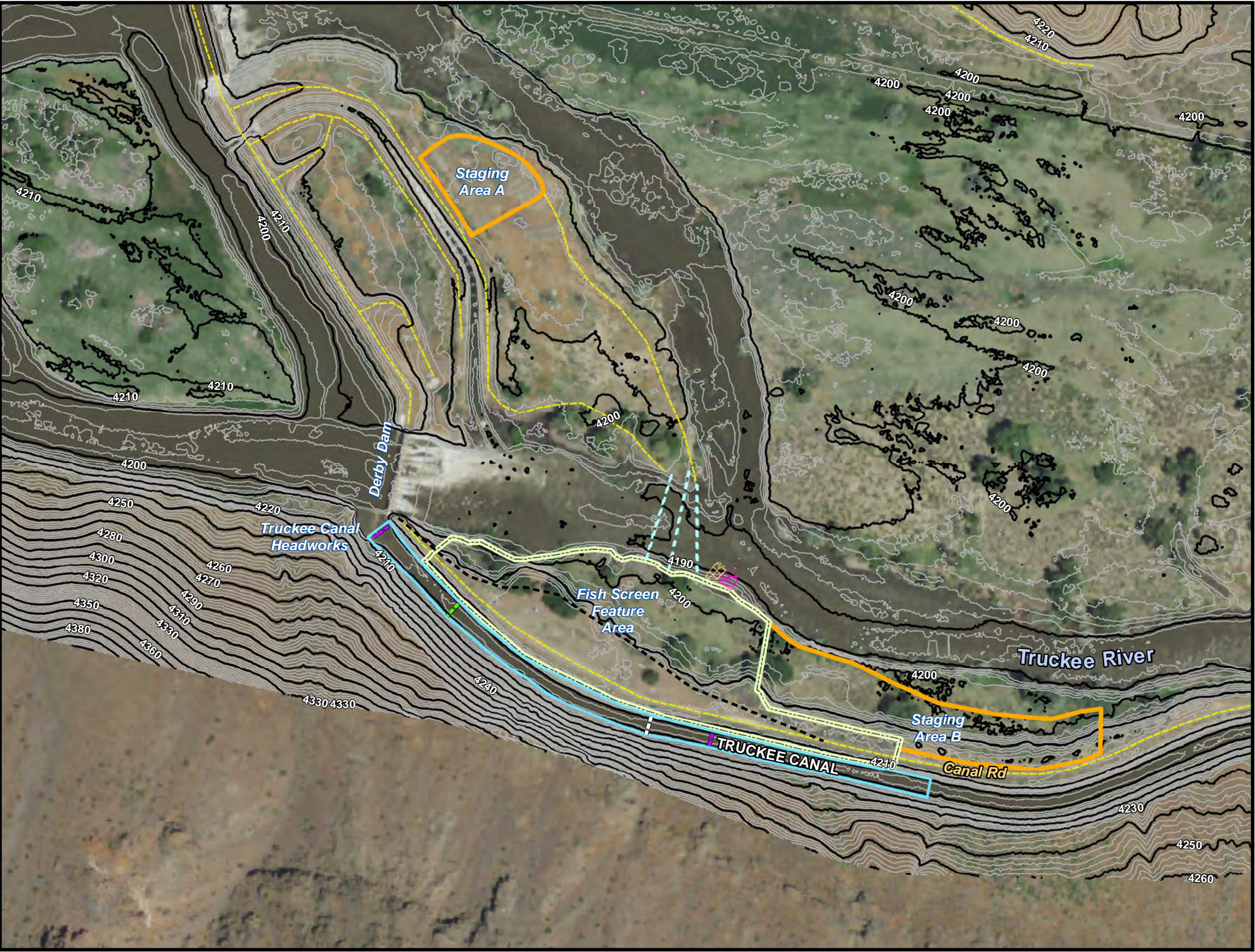
Staging Areas

There will be two permanent staging areas for the project (See Figure 2). Staging Area A is an existing area used for the construction of the fishway in 2004. Preparation of this area will require minor grading to level uneven areas. The proposed approximately 1.7-acre Staging Area B is to the east of the proposed fish screen. Preparation of this area will require filling with the excavated soil from the fish screen area, grading, and contouring. Following construction, both staging areas will be restored to the extent practical; however, portions of the area would also likely be used in the future for parking for maintenance activities, so they will not be completely revegetated.

Construction vehicles and equipment would be brought to the APE via two routes. Vehicles meeting weight and width restrictions of the one-lane bridge over the Truckee River would access via Canal Road, which parallels the Truckee Canal. This access point is from Interstate 80, Exit 40 for Painted Rock; it accesses Staging Area B and the APE south of the Truckee River.

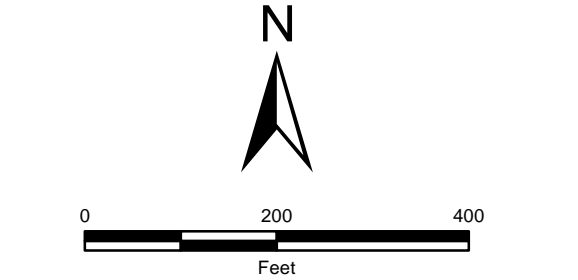
Larger vehicles and equipment would be brought to the APE via Interstate 80, Exit 36 for Derby Dam. It accesses Staging Area A and the APE to the north of the Truckee River. Vehicles and equipment that do not meet weight and width restrictions for the Canal Road bridge would be mobilized at Staging Area A, as described above, then would be moved to Staging Area B, as needed, via the temporary Truckee River crossing.





DERBY DAM FISH SCREEN
Figure 2
Site Plan

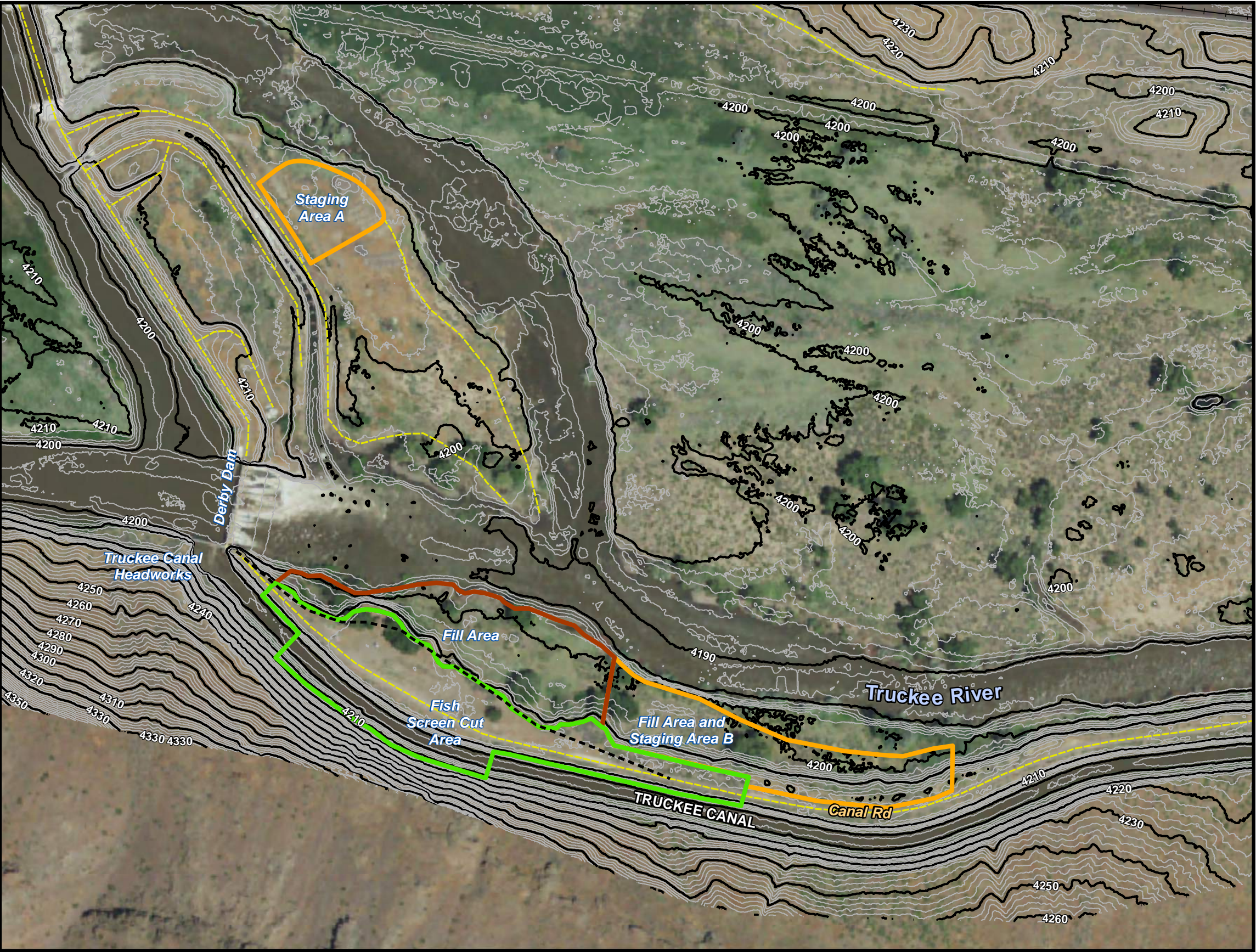
- Legend**
- Fish Screen Location (3.6 ac)
 - Truckee Canal Bypass, Geomembrane, Concrete Lined, or Permanent Covered Piping
 - Staging Areas, Fill and Grading (Area A. 0.6-ac, Area B. 2.0-ac)
 - Temporary Bridge or River Ford Possible Locations
 - Fish Return Deep Pool
 - Engineered Log Jam
 - New Road
 - Canal Bypass Forebay Gated Headwall
 - Canal Bypass Afterbay Headwall
 - Temporary Structure
 - Existing Access Roads (Unpaved)



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DERBY DAM FISH SCREEN
Figure 3
Excavation Plan

Legend

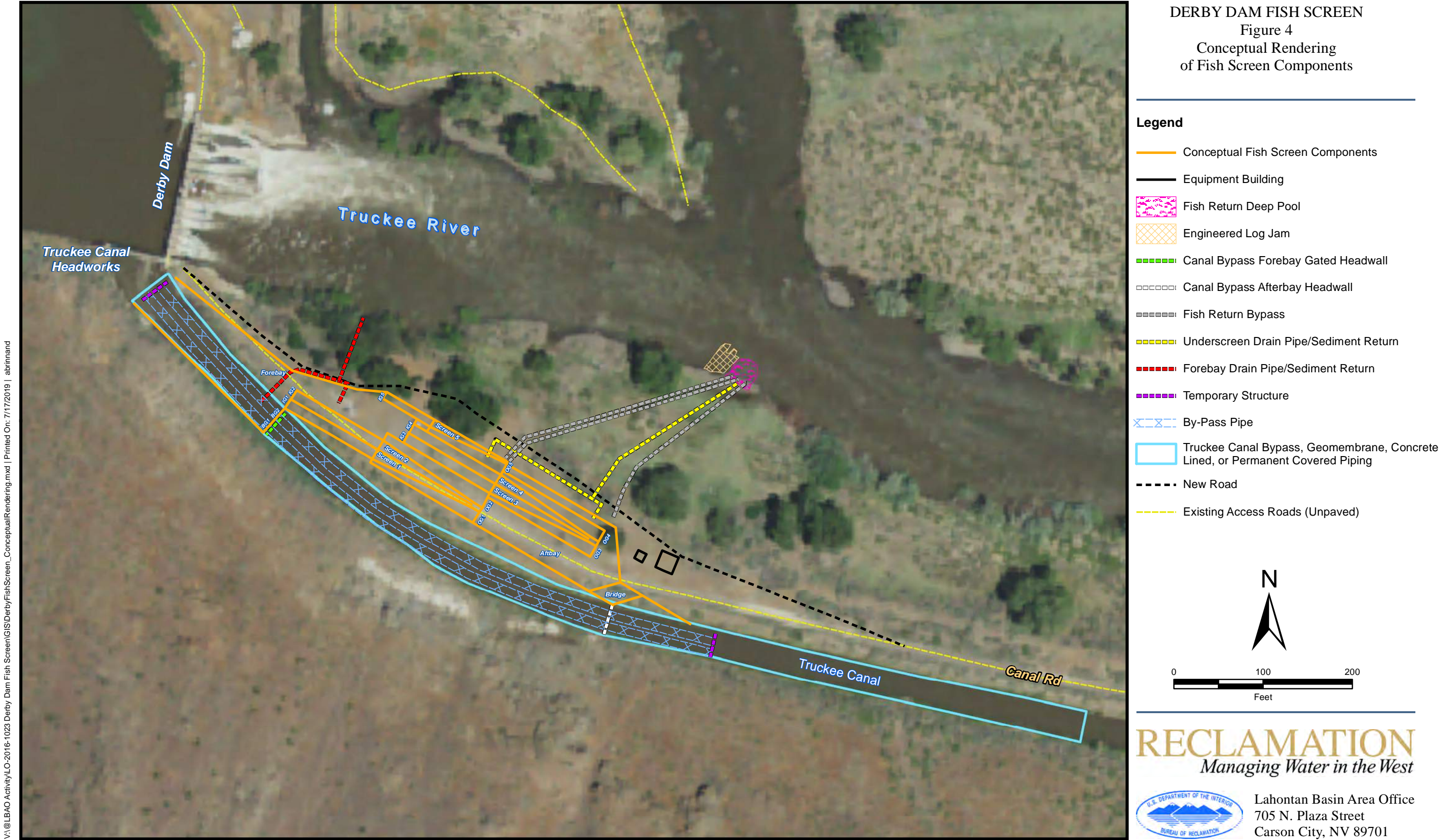
- Fill Area 0 - 15 ft (1.7 ac)
- Cut Area 5 - 20 ft (2.5 ac)
- Staging Areas, Fill, Grade, Contour (Area A. 0.6-ac, Area B. 2.0-ac)
- New Road
- Existing Access Roads (Unpaved)

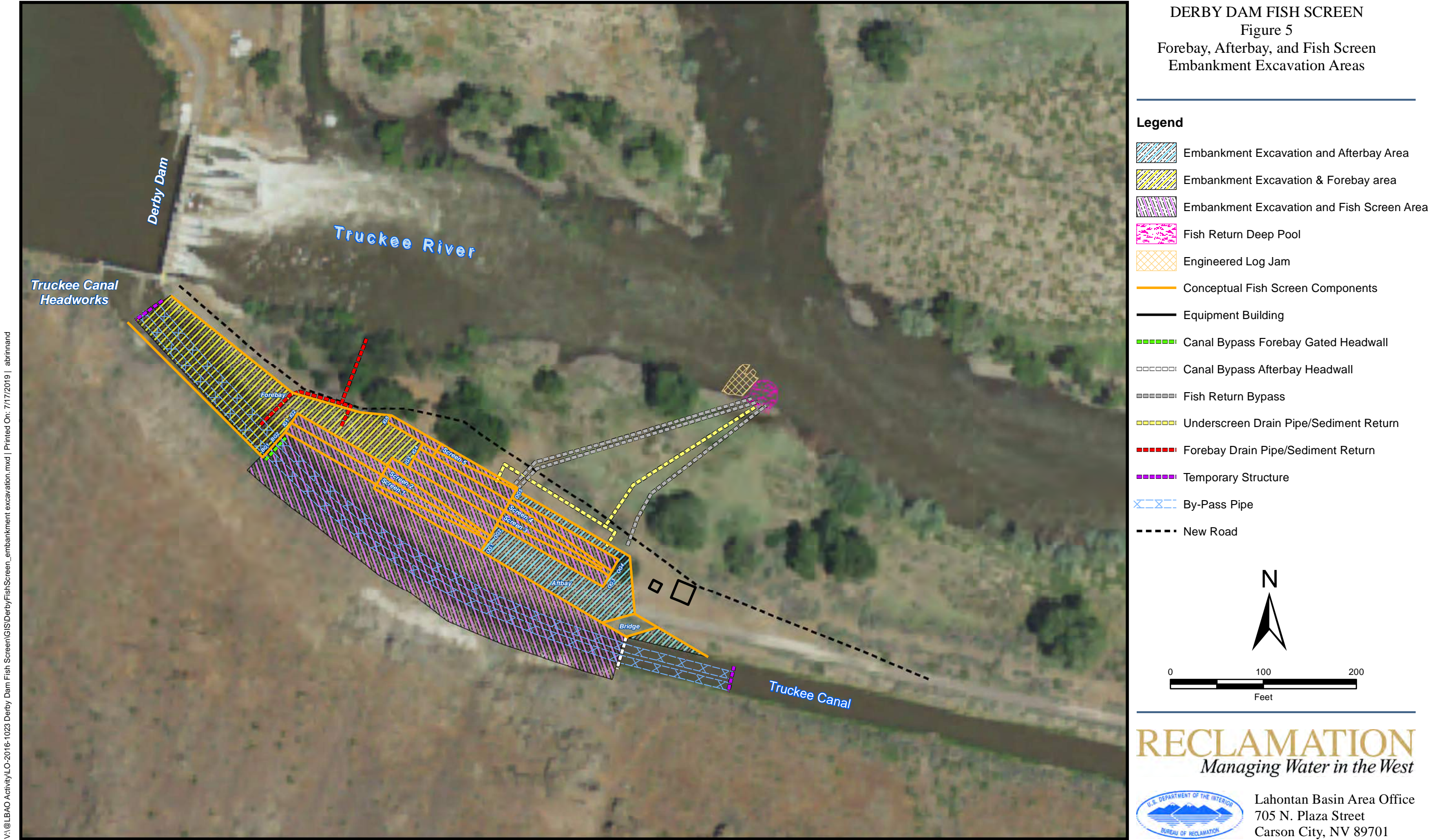
0 200 400
Feet

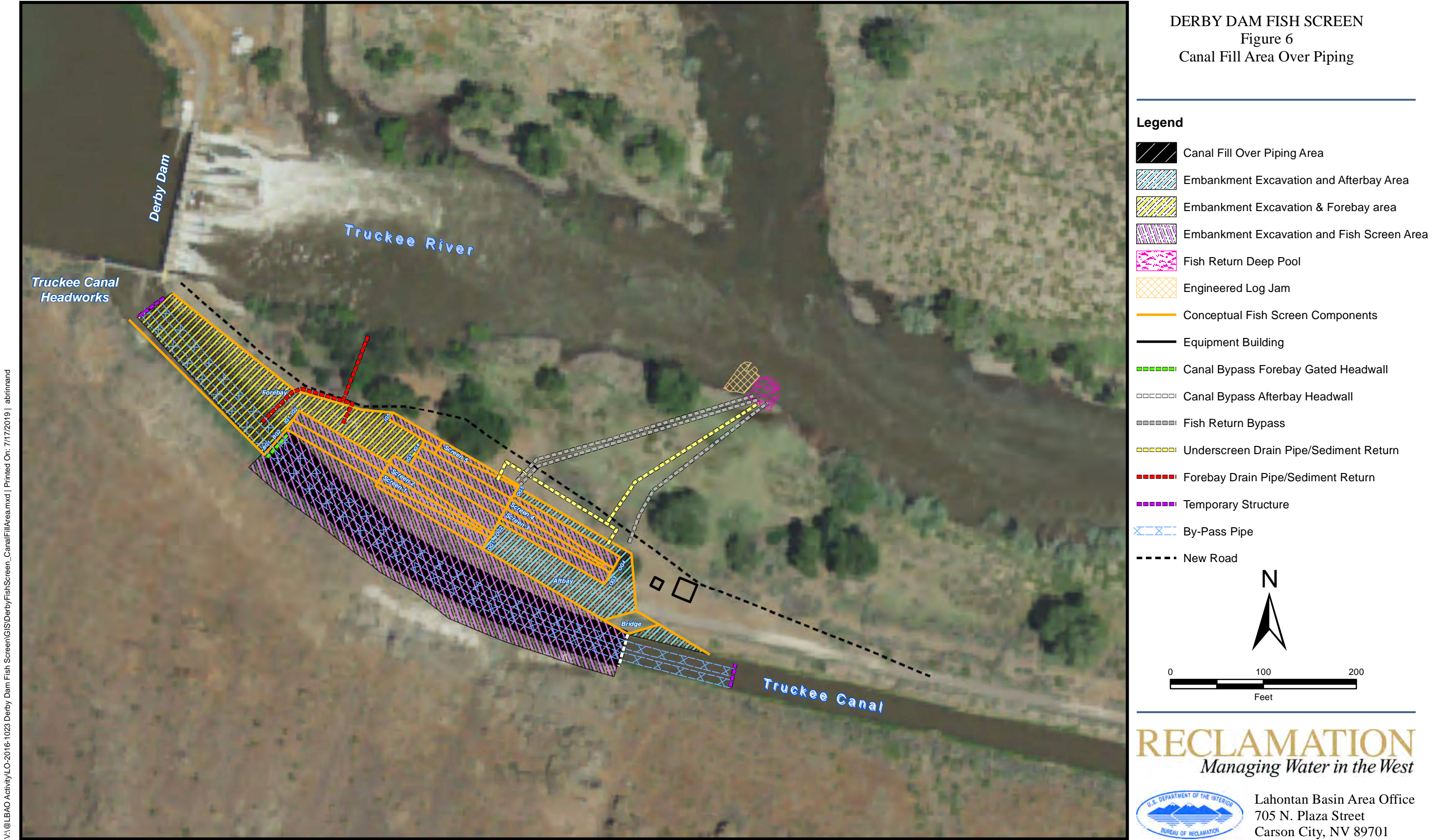
RECLAMATION
Managing Water in the West

U.S. DEPARTMENT OF THE INTERIOR
BUREAU OF RECLAMATION

Lahontan Basin Area Office
705 N. Plaza Street
Carson City, NV 89701







ATTACHMENT 3
DERBY DAM FISH SCREEN PROJECT
CHURCHILL COUNTY MUSEUM AND RECLAMATION AGREEMENT DOCUMENT